VIRGINIA DEPARTMENT OF TRANSPORTATION

TRAFFIC ENGINEERING DIVISION

INSTRUCTIONAL & INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: Signs	**NUMBER:** IIM-TE-394
	SUPERSEDES:
SPECIFIC SUBJECT: Flashing Beacons	**DATE:** September 22, 2020
APPROVAL: /original signed by/ Raymond J. Khoury, P.E. State Traffic Engineer Richmond, VA 09/22/2020 Raymond J. Khoury, P.E. State Traffic Engineer	

1.0 PURPOSE AND NEED

The Manual on Uniform Traffic Control Devices (MUTCD) allows many regulatory and warning signs to be supplemented with Flashing Beacons as per Chapter 4L of the MUTCD. Flashing Beacons can be either traditional circular flashing beacons, or Light-Emitting-Diodes (LEDs) that are arranged around the border of the sign[1] (see Section 2A.07 of the MUTCD). The purpose of these beacons are to improve the likelihood that the driver will notice and respond to the sign.

Flashing beacons, when properly used, are a very effective method of enhancing the conspicuity of signs. However their effectiveness is diminished when they are used indiscriminately and/or at locations where circumstances do not justify their use. In recent years, as solar-powered beacons have become affordable and relatively easy to install, flashing beacons have been installed without proper study or approval by the District Traffic Engineer.

This IIM is intended to provide guidance on when to use flashing beacons, and what approvals are required before such beacons are installed.

This IIM applies to the following sign types:

1) Intersection control beacons as per Section 4L.02 of the MUTCD. Intersection control beacons are also addressed in IIM-TE-387, Signal Justification Reports.
2) Warning sign beacons (i.e. curve warning signs, chevron signs, truck rollover signs, stop/signal ahead signs, bridge under clearance signs, etc.) as per Section 4L.03 of the MUTCD, except as stated below.

[1] For chevron sign (W1-8) beacons, the LEDs are arranged around the edge of the chevron arrow.

3) Speed limit sign beacons as per Section 4L.04 of the MUTCD, except as stated below.
4) Stop signs with red beacons as per Section 4L.05 of the MUTCD.

This IIM does not apply to the following:

1) Rectangular Rapid Flashing Beacons (RRFBs) for pedestrian/school crossings are governed by the latest effective revision to IIM-TE-384.
2) School zone speed limit signs are governed by the latest effective revision to IIM-TE-183.

Any consideration of a new beacon type not encompassed by the MUTCD (including red RRFBs to supplement Wrong Way or Do Not Enter signs) shall be coordinated with Central Office Traffic Engineering Division.

2.0 STANDARDS FOR FLASHING BEACON USE

Flashing beacons should be used sparingly, and only where engineering judgment indicates a need to enhance the visibility of the sign. This evaluation should consider:

1) Is there a problem at this location? That evaluation would include a review of crash history at this location.
2) Are there other factors (e.g. sight distance) contributing to the safety concerns at this location besides sign visibility?
3) Could the problem be addressed by other inexpensive measures? Examples include replacing the sign if the existing sign is in poor condition, removal/relocation of vegetation or objects blocking sight distance to the sign, or implementing other sign conspicuity enhancements as per Section 2A.15 of the MUTCD.

Stop sign/yield sign beacons should only be installed where a safety review indicates an issue with drivers not noticing the stop/yield sign. If the underlying crash issue is drivers properly coming to a stop but then failing to adequately judge gaps in cross traffic (due to insufficient sight distance or other reasons), then a stop/yield sign beacon would not address the underlying issue.

All flashing beacons on VDOT-maintained roads of a type governed by this IIM shall be approved by the District Traffic Engineer (DTE) or designee prior to installation.

On Secondaries, Residencies may use non-electronic methods of enhancing conspicuity of signs as per Section 2A.15 of the MUTCD without requiring DTE approval. Non-electronic methods include larger signs, doubled-up signs (placement on both left and right of the approaching travel lanes, and/or placing vertical retroreflective strips on the sign support as per Section 2A.21 of the MUTCD.

Prior to installing any conspicuity enhancements, the District or Residency should consider whether the existing sign needs to be replaced with a new sign using VDOT's current sign sheeting standards, and/or whether vegetation obstruction of the sign face is contributing to the underlying safety issue.

As per Section 2B.10 of the MUTCD, two stop signs cannot be placed on the same post.

Additional guidance on installation is available at the below links:
https://safety.fhwa.dot.gov/intersection/conventional/unsignalized/tech_sum/fhwasa09006/
https://safety.fhwa.dot.gov/intersection/other_topics/fhwasa08008/ue11_flashing_beacons.pdf

3.0 EFFECTIVE DATE

This IIM is effective for all potential flashing beacon locations not yet installed as of the issuance date of this IIM.

Existing flashing beacons installed prior to this IIM may be removed with concurrence from the DTE or designee.